

FIG. 1

layer two data center network

ES: End System

IS: Intermediate System

SS: Supervisor System

BSS: Backup Supervisor System

RS: Radius Server used for Authentication, Authorization, and Accounting (AAA)

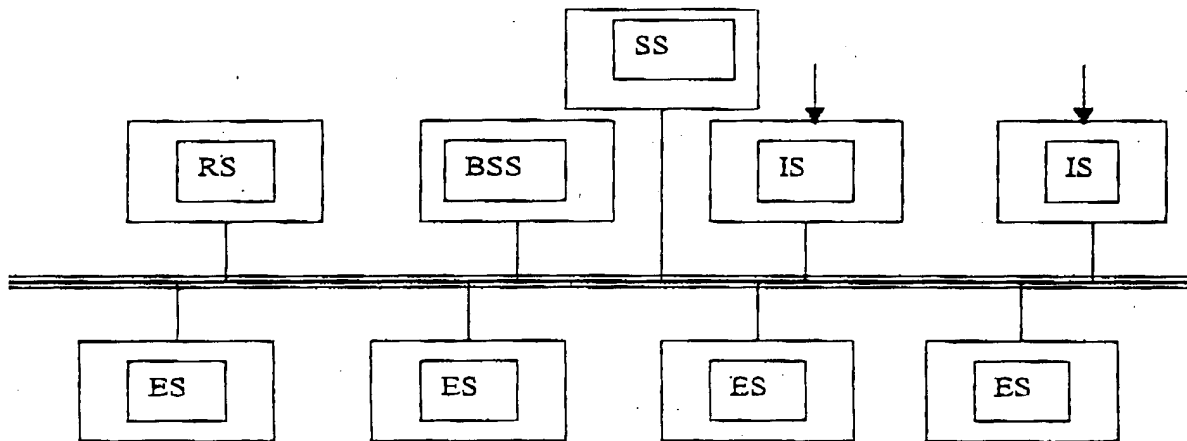


FIG. 2(a)

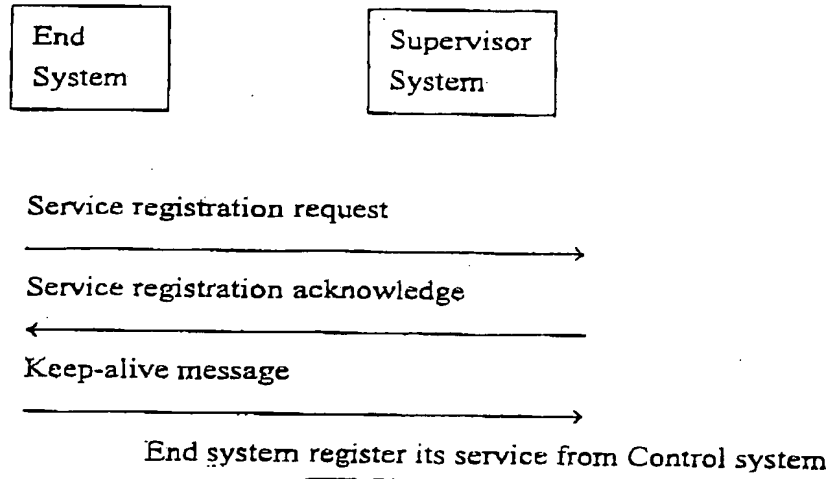


FIG. 2(b)

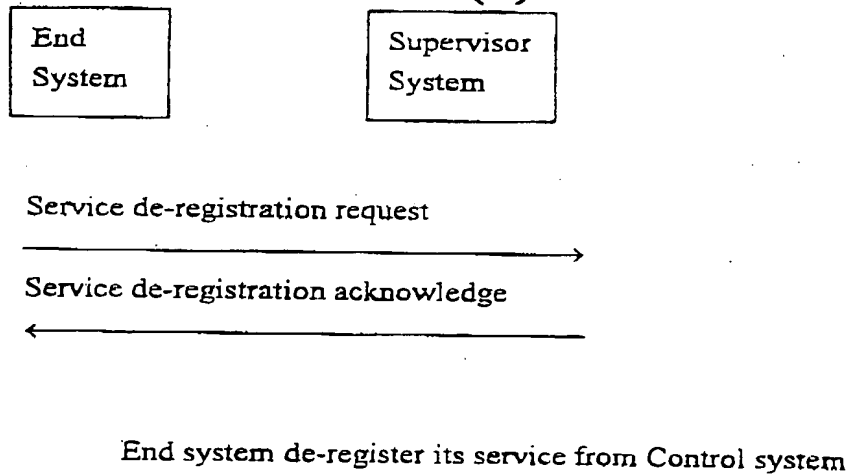


FIG. 3(a)

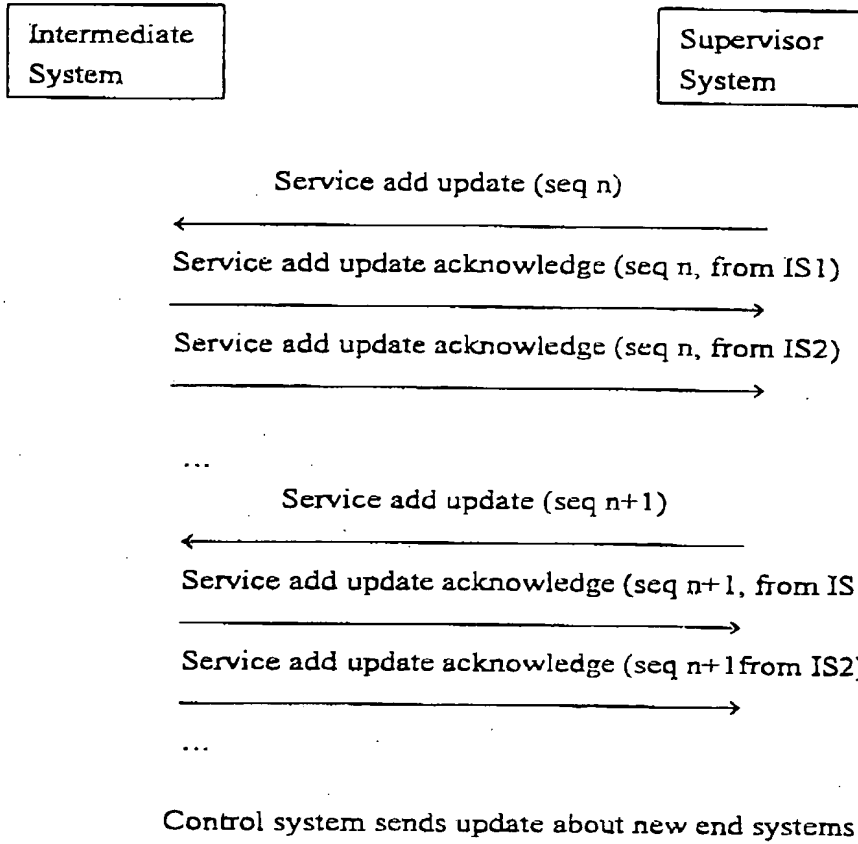
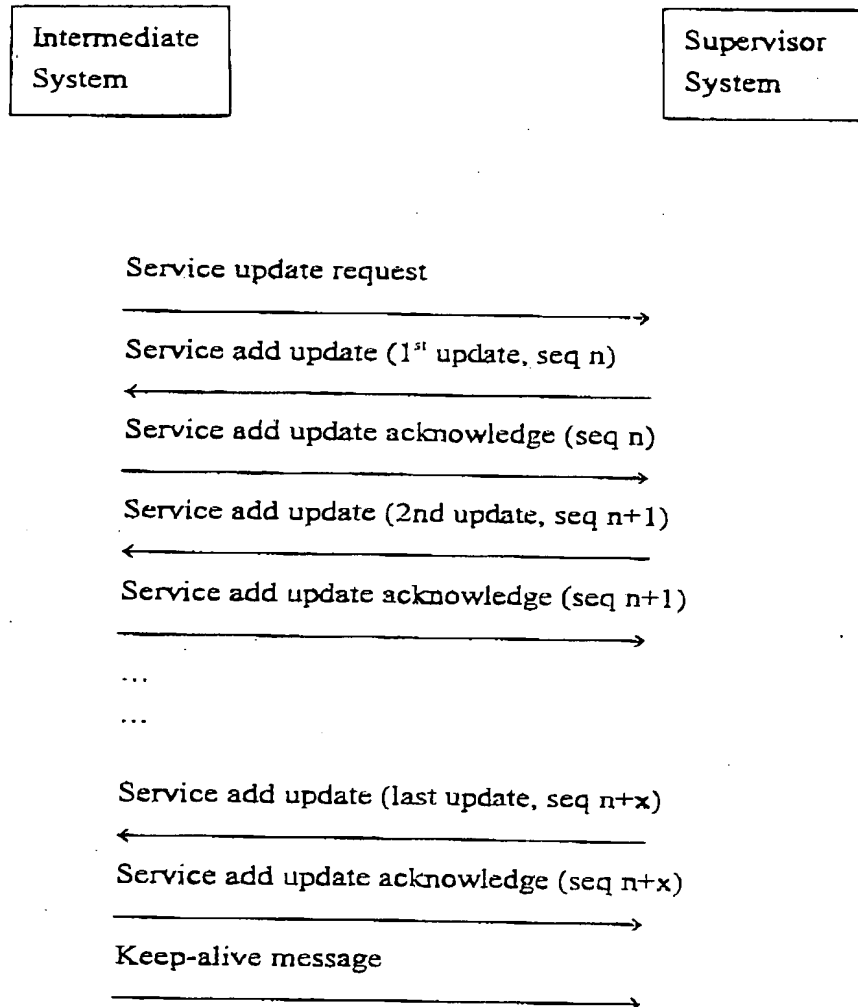


FIG. 3(a)

FIG. 3(b)

2025 RELEASE UNDER E.O. 14176

FIG. 3(c)



New intermediate system (possible an end system too) retrieve the server list for a specific type of service

FIG. 4(a)

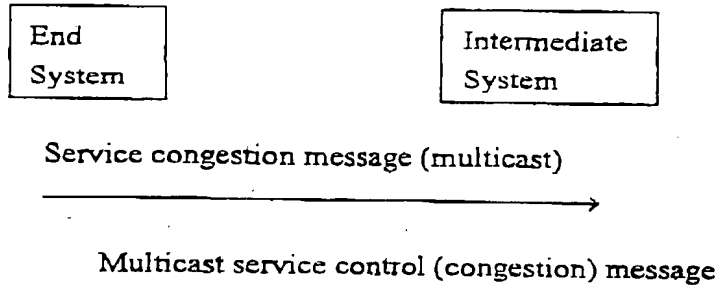


FIG. 4(b)

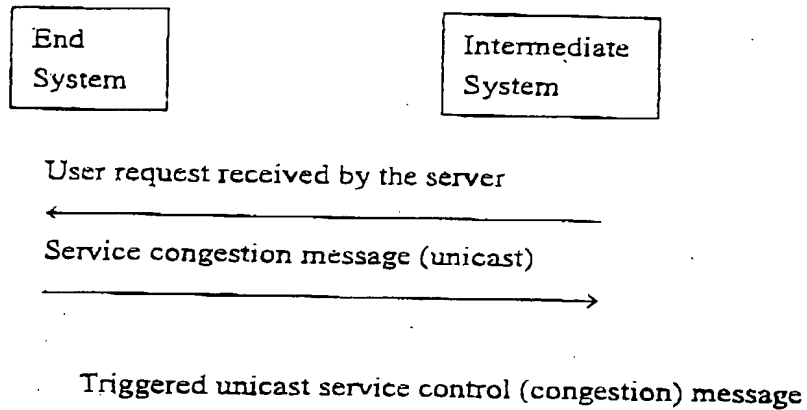


FIG. 4(c)

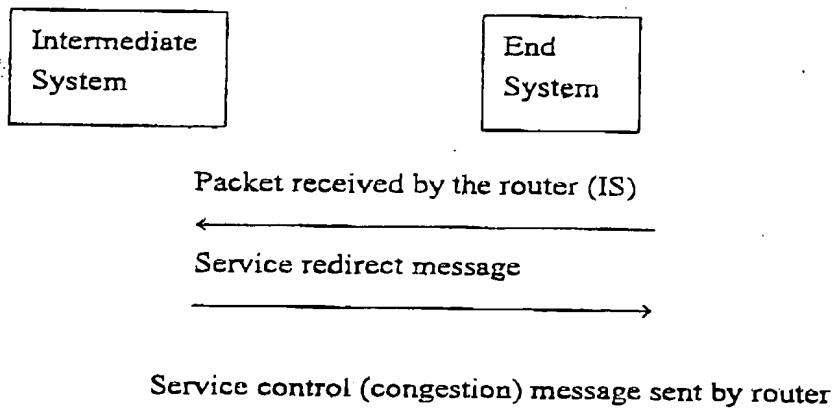
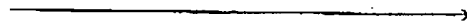


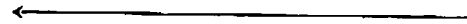
FIG. 5



Flow advertisement message

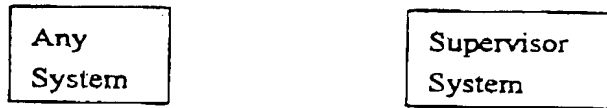


Flow advertisement acknowledge



Flow advertised by an end system

FIG. 6



Assigned number request

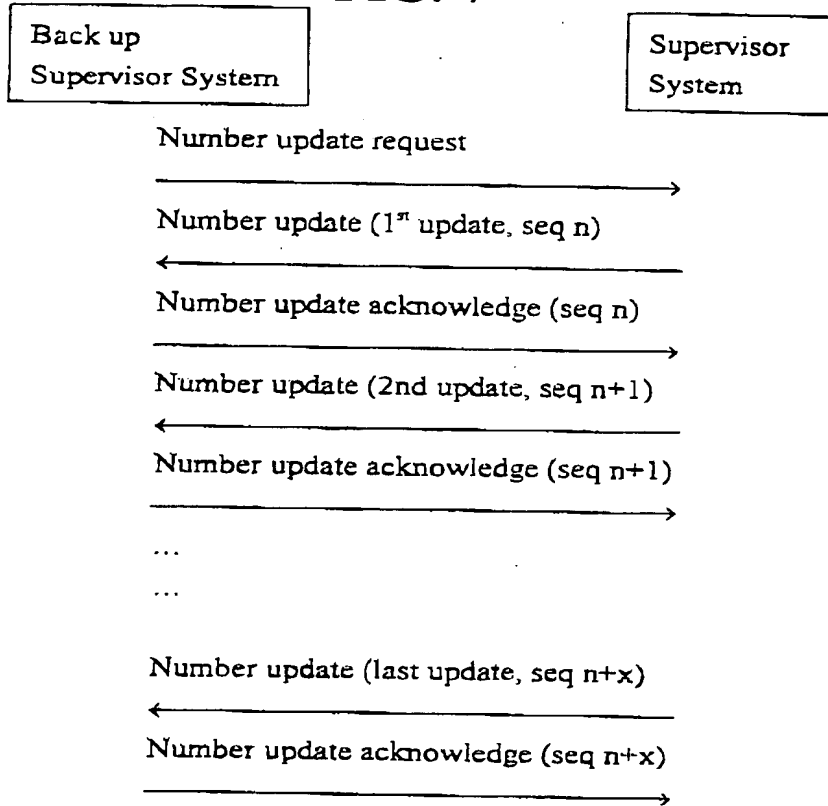


Assigned number reply



Request number(s) from centrally controlled number server (CS)

FIG. 7



New back up control system to retrieve the assigned number list from Primary control system



FIG. 8

Label value , 20 bits	Experimental Use, 3 bits	Bottom of stack, 1bit	Time To Live, 8 bits
-----------------------	--------------------------	-----------------------	----------------------

label encapsulation in user packet

FIG. 9

DMAC	SMAC	16 bit Flow frame type	32 bit Flow label	Frame type	Data
------	------	------------------------	-------------------	------------	------

DMAC	SMAC	16 bit Source frame type	32 bit Source label	Frame type	Data
------	------	--------------------------	---------------------	------------	------

DMAC	SMAC	16 bit VLAN frame type	16 bit VLAN 0 & priority	Flow frame type	32 bit flow label	Frame type	Data
------	------	------------------------	--------------------------	-----------------	-------------------	------------	------

DMAC	SMAC	VLAN frame type	VLAN 0 & priority	Source frame type	32 bit source label	Frame type	Data
------	------	-----------------	-------------------	-------------------	---------------------	------------	------

Frame formats with or without VLAN priority

FIG. 10

DMAC	SMAC	Type	Message
------	------	------	---------

IP header	Message
-----------	---------

UDP header	Message
------------	---------

protocol message format

FIG. 11

2 byte Message Type	2 byte Message length	Message
---------------------------	-----------------------------	---------

common message header format

FIG. 12

Server Address	Service type matching rule	4 byte Number of Service attributes	Service attributes (keep-alive etc.)	Service type matching rule	...
-------------------	----------------------------------	--	---	-------------------------------	-----

message format for service registration request

FIG. 13

Server Address	4 byte Service type	4 byte Service type	4 byte Service type	...
-------------------	------------------------	------------------------	------------------------	-----

message format for service de-registration request

FIG. 14

4 byte Service type	Group Addresses	4 byte precedence	4 byte Service type	Group Addresses	...
------------------------	--------------------	----------------------	------------------------	--------------------	-----

Server Unicast Address	Server Multicast Address	Client Multicast Address
------------------------------	--------------------------------	--------------------------------

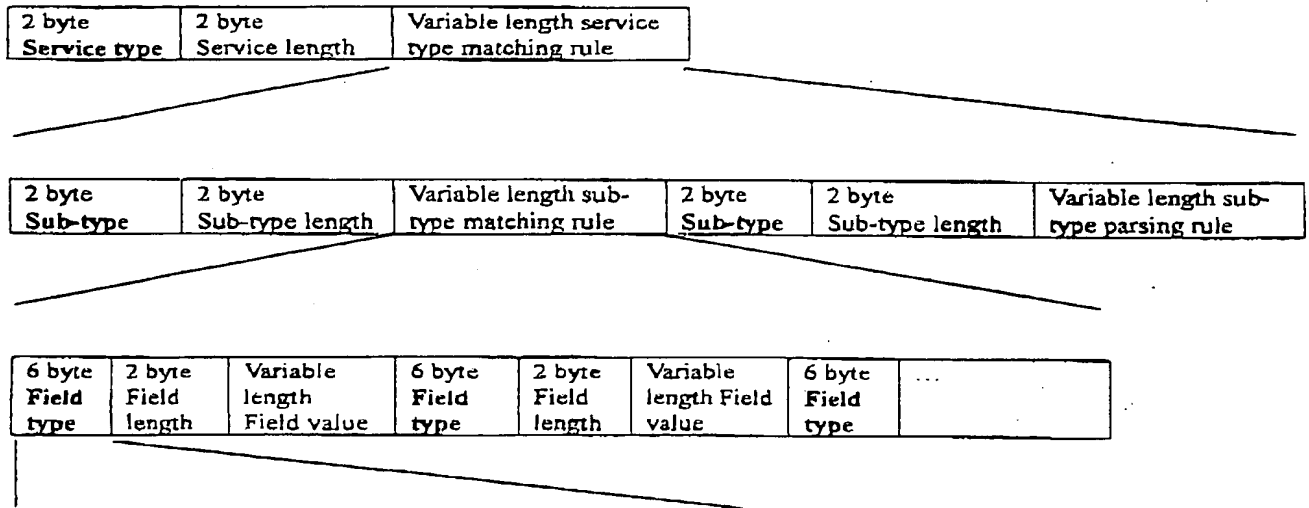
message format for service registration acknowledge

FIG. 15

4 byte Service type	Server Address	4 byte Service type	Server Address	...
------------------------	-------------------	------------------------	-------------------	-----

message format for service de-registration acknowledge

FIG. 16



2 byte Starting bit location	2 byte bit length	2 byte operator
------------------------------	-------------------	-----------------

service type matching rule message format

FIG. 17

4 byte Service type	4 byte Service type	4 byte Service type	4 byte Service type	...
------------------------	------------------------	------------------------	------------------------	-----

message format for service update request

FIG. 18

4 byte Sequence number	Group Addresses	Service type matching rule	Group Addresses	Service type matching rule	...
---------------------------	--------------------	-------------------------------	--------------------	-------------------------------	-----

Server Unicast Address	Server Multicast Address	Client Multicast Address
------------------------------	--------------------------------	--------------------------------

message format for service addition update

FIG. 19

4 byte Sequence number	Group Addresses	4 byte Service type	Group Addresses	4 byte Service type	...
------------------------	-----------------	---------------------	-----------------	---------------------	-----

Server Unicast Address	Server Multicast Address	Client Multicast Address
------------------------	--------------------------	--------------------------

Message format for service delete update

FIG. 20

4 byte Sequence number	Group Addresses	4 byte Service type	Group Addresses	4 byte Service type	...
------------------------	-----------------	---------------------	-----------------	---------------------	-----

Server Unicast Address	Server Multicast Address	Client Multicast Address
------------------------	--------------------------	--------------------------

message format for service update acknowledgement

FIG. 21

4 byte Service Type	Server Address	4 byte Number of Service attributes	2 byte Service attribute type	2 byte Service attribute length	Attribute value	2 byte Service attribute type	...
---------------------	----------------	-------------------------------------	-------------------------------	---------------------------------	-----------------	-------------------------------	-----

message format for service control advertisement

FIG. 22

Flow matching rule	4 byte Number of flow attributes	Flow Attributes	Flow matching rule	...
--------------------	----------------------------------	-----------------	--------------------	-----

message format for flow advertisement

FIG. 23

Flow label	4 byte Number of flow attributes	Flow Attributes	Flow label	4 byte Number of flow attributes	Flow Attributes	Flow label	...
------------	----------------------------------	-----------------	------------	----------------------------------	-----------------	------------	-----

message format for flow advertisement acknowledgement

FIG. 24

2 byte flow Attribute type	2 byte Attribute length	Variable length Attribute value
----------------------------	-------------------------	---------------------------------

message format for flow attribute

FIG. 25

4 byte total number of number types	2 byte Number type	2 byte Length	Values	2 byte Number type	...
-------------------------------------	--------------------	---------------	--------	--------------------	-----

Message format for Assigned Number Request

FIG. 26

4 byte total number of number types	2 byte Number type	2 byte Length	Values	2 byte Number type	...
-------------------------------------	--------------------	---------------	--------	--------------------	-----

Message format for Assigned Number Acknowledgement

4 byte total number of number types	2 byte Number type	2 byte Number type	2 byte Number type	2 byte Number type	...
---	--------------------------	--------------------------	--------------------------	--------------------------	-----

4 byte Sequence number	4 byte total number of number types	2 byte Number type	2 byte Length	Values	2 byte Number type	2 byte Length	...
------------------------	-------------------------------------	--------------------	---------------	--------	--------------------	---------------	-----

4 byte Sequence number	4 byte total number of number types	2 byte Number type	2 byte Length	Values	2 byte Number type	2 byte Length	...
------------------------	-------------------------------------	--------------------	---------------	--------	--------------------	---------------	-----

### Message format for Assigned Number Update Acknowledgement